REMARKS/ARGUMENTS

Status of the claims

Claims 1, 10 and 11 are pending in the application. Claims 1, 10 and 11 have been amended. Claim amendments are for purposes of improved clarity or consistency of claim language unless otherwise noted. No claim amendment should be construed as an acquiescence in any ground of rejection. No new matter has been added by this amendment. Support for the amendment to claims 1, 10 and 11 can be found throughout the specification and, for example, on page 1, l. 16, page 2, l. 22, and page 31, l. 7 to page 32, l. 10.

A new oath or declaration is required. Claims 1 and 10 have been rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement. Claims 1, 10 and 11 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1, 10 and 11 have been rejected under 35 U.S.C. § 102(e)(2) as being anticipated by the Capon et al. patent (U.S. patent 6,103,521; "the Capon patent").

Election in response to restriction requirement

Applicants' election with traverse of Group I (claims 1, 10 and 11) in Paper No. 14, filed June 19, 2003, has been acknowledged by the Office. Claims 2-9, and 12-24 have been withdrawn from consideration at this time as being drawn to non-elected Groups without prejudice to pursuing the non-elected claims in a continuing application.

New oath or declaration

The Office requires a new oath or declaration. New declarations by the inventors in compliance with 37 C.F.R. § 1.67(a) identifying this application by application number and filing date accompany this response.

Claims 1 and 10 are patentable under 35 U.S.C. § 112, first paragraph

Claims 1 and 10 have been rejected under 35 U.S.C. § 112, first paragraph, for allegedly being drawn to subject matter that is not enabled by the specification. Applicants traverse the rejection.

The enablement requirement of 35 U.S.C. § 112 is satisfied so long as a disclosure contains sufficient information that persons of ordinary skill in the art having the disclosure before them would be able to make and use the invention. *In re Wands*, 858 F.2d 731, 8 U.S.P.Q.2d 1400 (Fed. Cir.1988) (the legal standard for enablement under § 112 is whether one skilled in the art would be able to practice the invention without undue experimentation). Several factors are considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to:

> (a) The breadth of the claims; (b) The nature of the invention; (c) The state of the prior art; (d) The level of one of ordinary skill; (e) The level of predictability in the art; (f) The amount of direction provided by the inventor; (g) The existence of working examples; and (h) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

858 F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988)

One skilled in the art would be able to practice Applicants' claimed invention without being required to perform undue experimentation. In consideration of all factors, the amount of direction provided by the inventors and the number of working examples are sufficient to enable the claimed invention. The claimed invention is enabled because DNA microarray measurement of whole cell gene expression is a technique readily available to one of ordinary skill in the art. Considering the amount of direction provided in the specification one of ordinary skill in the art can practice the claimed invention without undue experimentation.

The specification is enabling for a method for inhibiting KSHV replication because the specification provides a detailed disclosure of a cellular assay in which gene expression is measured and compared between KSHV-infected cells and uninfected cells. The cell line, DMVEC (immortalized dermal microvascular cells), is useful for this assay. In exemplary embodiments, the cellular assay was used to detect upregulated genes in DNA microarray analysis of KSHV-infected DMVEC compared to uninfected DMVEC cells. One gene that is consistently upregulated as measured by DNA microarray analysis is the c-Kit gene. The result was further confirmed by measurement of enhanced c-Kit mRNA expression, c-Kit surface protein on KSHV-infected DMVEC cells by RT-PCR, and by immunofluorescent staining for c-Kit. See specification, for example, at page 47, l. 1-21. The cellular assay as

described in the specification provides detailed direction and working examples which enable one skilled in the art to identify *any* compound that inhibits c-Kit. The Office admits that several compounds have been identified by the method of the claimed invention, *e.g.*, as 2-phenylaminopyrimidine derivative, STI 571, PDTC (pyrrolidinedithiocarbamate), trans-retinoic acid, SB203580, calcitonin gene-related peptide (CGRP), CGRP-8-37 peptide, InCELLect AKAP St-Ht31, St-Ht31-control peptide, haloperidol, phorbol-112-myristate-13-acetate (PMA), Ganciclovir, 15-deoxy$^{(12-14)}$ prostaglandin J2. See specification, for example, at page 44.

In support of enablement of the claimed invention, the following statement from *In re Marzocchi*, 169 U.S.P.Q. 367, 369-370 (C.C.P.A. 1971), is noteworthy:

> The only relevant concern of the Patent Office under these circumstances should be over the truth of any such assertion. The first paragraph of §112 requires nothing more than objective enablement. How such a teaching is set forth, either by the use of illustrative examples or by broad terminology, is of no importance.
>
> As a matter of Patent Office practice, then, a specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as in compliance with the enabling requirements of the first paragraph of §112 unless there is reason to doubt the objective truth of the statements contained therein which must be relied upon for enabling support. (emphasis added)

A sufficient number of successful examples identifying compounds that inhibit c-Kit signaling pathway and an example of a cellular assay to detect inhibition of replication of KSHV provide sufficient objective evidence that the method for inhibiting replication of KSHV is enabled. One skilled in the art would be able to practice the claimed invention without being required to perform undue experimentation. Further, the Office Action has failed to provide credible reasoning or evidence to doubt the objective truth of the statements contained in the present application. For these reasons, Applicants request that the rejection of claims 1 and 10 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Claims 1, 10 and 11 are patentable under 35 U.S.C. § 112, sec nd paragraph

Claims 1, 10 and 11 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Applicants have amended the claims to better define the claims without limiting the claimed invention.

Applicants have amended claims 1, 10, and 11 by adding the full name for "Kaposi's sarcoma herpesvirus (KSHV)" and "receptor tyrosine kinase c-Kit", instead of an abbreviation.

Applicants have amended claims 1 and 10 to "a therapeutically effective amount of a compound." Pharmaceutical compositions are well described in the specification, including dosages, frequency, and delivery method to a subject. See specification, for example, at page 29, l. 16 to page 35, l. 10.

Applicants have amended claim 1 to better define that the method step includes administration of a therapeutically effective amount of a compound that inhibits replication of KSHV and c-Kit signaling pathway. Applicants have amended claims 10 and 11 to refer to a "first compound" and a "second compound." The amendment is for purposes of improved clarity or consistency of claim language and should not be construed as an acquiescence in any ground of rejection. Applicants request that the rejection of claims 1, 10 and 11 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claims 1, 10, and 11 are patentable under 35 U.S.C. § 102(e)(2)

Claims 1, 10, and 11 have been rejected under 35 U.S.C. § 102(e)(2) as allegedly being anticipated by the Capon et al. patent (U.S. patent 6,103,521; "the Capon patent"). Applicants traverse the rejection.

Applicants' claimed invention is novel in view of the Capon patent. The Office alleges that, in claim 1, there is no direct inhibition required of the c-Kit signaling pathway. Applicants' claim 1 is directed to a method for inhibiting replication of Kaposi's sarcoma herpesvirus (KSHV) and receptor tyrosine kinase c-Kit comprising administration of a therapeutically effective amount of a compound that inhibits replication of KSHV and c-Kit signaling pathway. Contrary to the assertion by the Office, the method of claim 1 includes a step of administration of a therapeutically effective amount of a compound that inhibits replication of KSHV *and* c-Kit signaling pathway. The therapeutic effect of

administering a compound is to inhibit replication of KSHV and reduce disease associated with viral infection. Claim 1 is novel in view of the Capon patent because the Capon patent does not teach or disclose such a method. The Capon patent teaches a DNA molecule encoding a chimeric membrane bound protein which comprises a proliferation signaling domain that may be obtained from the signal-transducing domains of the tyrosine kinase growth factor receptor superfamily, such as c-Kit. The Capon patent does not teach or suggest a method for administration of a compound that inhibits replication of KSHV and c-Kit signaling pathway. Therefore, claim 1 is novel in view of the Capon patent.

Claims 10 and 11 are novel in view of the Capon patent. Claims 10 and 11 are directed to a method for inhibiting replication of Kaposi's sarcoma herpesvirus (KSHV) comprising administration of a therapeutically effective amount of a first compound that inhibits receptor tyrosine kinase c-Kit and administration of a therapeutically effective amount of a second compound that modulates KSHV replication by a mechanism other than inhibition of receptor tyrosine kinase c-Kit. The Office asserts that claims 10 and 11 can be interpreted to mean that one compound is administered for two effects. The Office further asserts that the compound taxol meets these requirements and concludes that the Capon patent anticipates the method of administering taxol. Claims 10 and 11 are novel in view of the Capon patent because the Capon patent does not teach or disclose a method comprising steps of administration of a therapeutically effective amount of a first compound and a therapeutically effective amount of a second compound. The first compound inhibits receptor tyrosine kinase c-Kit, and the second compound modulates KSHV replication by a mechanism other than inhibition of receptor tyrosine kinase c-Kit. Despite the fact that the Capon patent teaches the therapeutic administration of taxol, the Capon patent does not teach an additional method step comprising administration of a therapeutically effective amount of a first compound that inhibits receptor tyrosine kinase c-Kit. Therefore, claims 10 and 11 are novel in view of the Capon patent.

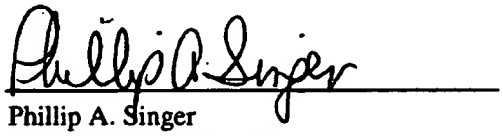
Accordingly, Applicants request that the rejection of claims 1, 10 and 11 under 35 U.S.C. §102(e) be withdrawn.

CONCLUSION

In view of the foregoing, Applicants believ all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 206-332-1380.

Date: January 8, 2004



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